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DEPARTMENT OF THE ARMY JUSTIFICATION OF ESTIMATES FOR
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RESEARCH DEVELOPMENT AND ACQUISITION... JAN 87

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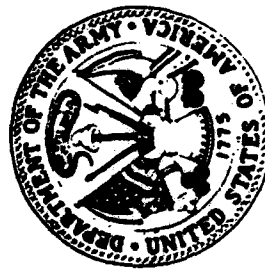
DEPARTMENT OF THE ARMY

JUSTIFICATION OF ESTIMATES FOR FISCAL YEARS 1988/1989

SUBMITTED TO CONGRESS

JANUARY 1987

AD-A184 211



PROCUREMENT PROCUREMENT OF AMMUNITION, ARMY PROGRAMS

AIRCRAFT

MISSILES

WEAPONS & TRACKED COMBAT VEHICLES

AMMUNITION

OTHER

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DEPARTMENT OF THE ARMY

PROCUREMENT OF AMMUNITION, ARMY

JUSTIFICATION OF ESTIMATES FOR FISCAL YEARS 1988, 1989

TABLE OF CONTENTS

	<u>PAGE NO.</u>
Section 1: Budget Appendix Extract,.....	4-1
Section 2: Budget Activity Justifications	4-11
Section 3: Comparison of Program Requirements and Financing	4-37
Section 4: Selected Data Sheets	4-44

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4-i January 1987

PROCUREMENT OF AMMUNITION, ARMY

Section I:

Budget Appendix Extract

Appropriation Language

FY 1988/89 Program and Financing Schedule

FY 1988/89 Object Classification Schedule

4-1 January 1987

Procurement of Ammunition, Army

APPROPRIATION LANGUAGE

For construction, procurement, production, and modification of ammunition, and accessories therefor; specialized equipment and training devices; expansion of public and private plants, including ammunition facilities authorized in military construction authorization acts or authorized by section 2673, title 10, United States Code, and the land necessary therefor, without regard to section 4774, title 10, United States Code, for the foregoing purposes, and such lands and interests therein, may be acquired, and construction prosecuted thereon prior to approval of title as required by section 355, Revised Statutes, as amended; and procurement and installation of equipment, appliances, and machine tools in public and private plants; reserve plant and Government and contractor-owned equipment layaway; and other expenses necessary for the foregoing purposes; (\$2,087,150,000) \$2,194,275,000 of which \$258,100,000 shall be available only for the Army National Guard and Army Reserve to remain available for obligation until September 30, (1989) 1990 and further for the foregoing purposes, \$2,194,755,000 of which \$218,000,000 shall be available only for the Army National Guard and Army Reserve, to become available for obligation on October 1, 1988 and to remain available for obligation until September 30, 1991.

Procurement of Ammunition, Army
Program and Financing (in thousands of dollars) FISCAL YEAR 1984 05 Jan 87

Identification code	21-2034-0-1-051	Budget plan (amounts for PROCUREMENT actions programmed)				Obligations			
		1986 actual	1987 est.	1988 est.	1989 est.	1986 actual	1987 est.	1988 est.	1989 est.
Program by activities:									
Direct program:									
00.0101	Ammunition					67,550			
00.0201	Ammunition production base support					46,600			
10.0001	Total					114,150			
Financing:									
Offsetting collections from:									
11.0001	Federal funds(-)					480			
13.0001	Trust funds(-)					6,596			
17.0001	Recovery of prior year obligations					-53,284			
Unobligated balance available, start of year:									
21.4002	For completion of prior year budget plans					-72,448			
21.4003	Available to finance new budget plans					-30,400			
21.4007	Reprogramming from/to prior year budget plans					4,526			
22.4001	Unobligated balance transferred to other accounts					28,910			
23.4002	Reduction pursuant to P.L. 99-177 in unob bal: Apr					4,749			
25.0001	Unobligated balance lapsing					1,267			
39.0001	Budget authority								

4-3 January 1987

Procurement of Ammunition, Army
Program and Financing (in Thousands of dollars) FISCAL YEAR 1985

05 Jan 87

Identification code	21-2034-0-1-05)	Budget Plan (amounts for PROCUREMENT actions programmed)				Obligations			
		1986 actual	1987 est.	1988 est.	1989 est.	1986 actual	1987 est.	1988 est.	1989 est.
Program by activities:									
Direct program:									
00.0101	Ammunition					205,011		19,388	
00.0201	Ammunition production base support					99,817		7,286	
00.9101	Total direct program					304,828		26,674	
01.0101	Reimbursable program						732	3,824	
10.0001	Total					305,560		30,498	
Financing:									
Offsetting collections from:									
11.0001	Federal funds(-)						-362		
13.0001	Trust funds(-)						2,159		
14.0001	Non-Federal sources(-)						-1		
17.0001	Recovery of prior year obligations						-182,715		
	Unobligated balance available, start of year:								
	For completion of prior year budget plans								
21.4002	Available to finance new budget plans								
21.4003	Reprogramming from/to prior year budget plans						-197,445		-30,498
21.4007	Unobligated balance transferred to other accounts						147,700		-33,000
22.4001	Unobligated balance rescinded: Appropriation								
23.4001	Reduction pursuant to P.L. 99-177 in unob bal: Apr						140,463		
23.4002	Unobligated balance available, end of year:								
24.4002	For completion of prior year budget plans						16,543		33,000
24.4003	Available to finance subsequent year budget plans								
	Budget authority						33,000		
39.0001									

4-4 January 1987

US Jan 87

Procurement of Ammunition, Army
Program and Financing (in Thousands of dollars) FISCAL YEAR 1986

Identification code	21-2034-0-1-051	Budget plan (amounts for PROCUREMENT actions programmed)				Obligations			
		1986 actual	1987 est.	1988 est.	1989 est.	1986 actual	1987 est.	1988 est.	1989 est.
Program by activities:									
Direct program:									
00.0101	Ammunition	1,864,574				1,728,196	38,074	98,304	
00.0201	Ammunition production base support	470,701				219,031	228,135	23,535	
00.9101	Total direct program	2,335,275				1,947,227	266,209	121,839	
01.0101	Reimbursable program	102,409				97,547	4,862		
10.0001	Total	2,437,684				2,044,774	271,071	121,839	
Financing:									
Offsetting collections from:									
11.0001	Federal funds(-)	-74,022				-74,022			
13.0001	Trust funds(-)	-28,129				-28,129			
14.0001	Non-Federal sources(-)	-258				258			
Unobligated balance available, start of year:									
21.4002	For completion of prior year budget plans								
21.4003	Available to finance new budget plans								
23.4001	Unobligated balance rescinded: Appropriation								
Unobligated balance available, end of year:									
24.4002	For completion of prior year budget plans					392,910	121,839		
24.4003	Available to finance subsequent year budget plans	39,562				39,562			
40.0001	Budget authority (Appropriation)	2,374,837				2,374,837			

4-5 January 1987

05 JAN 67

Identification code	21-2034-0-1-051	Program and financing	Budget Plan (amounts for PROCUREMENT actions programmed)						Obligations			
			1986 actual	1987 est.	1988 est.	1989 est.	1986 actual	1987 est.	1988 est.	1989 est.		
Program by activities:												
Direct program:												
00.0101		Amunition		1,732,150					1,507,024		131,324	93,802
00.0201		Amunition production base support		355,000					312,400		24,850	17,750
00.9101		Total direct program		2,087,150					1,819,424		156,174	111,552
01.0101		Reimbursable program		143,900					143,900			
10.0001		Total		2,231,050					1,963,324		156,174	111,552
Financing:												
Offsetting collections from:												
11.0001		Federal funds(-)		-96,000					-96,000			
13.0001		Trust funds(-)		-47,900					-47,900			
Unobligated balance available, start of year:												
21.0002		For completion of prior year budget plans									-267,726	-111,552
Unobligated balance available, end of year:												
24.0002		For completion of prior year budget plans							267,726		111,552	
40.0001		Budget authority (Appropriation)		2,087,150					2,087,150			

4-6 January 1987

		Procurement of Ammunition, Army Program and Financing (in thousands of dollars) FISCAL YEAR 1988		05 Jan 87	
		Budget Plan (amounts for PROUREMENT actions programmed)		Obligations	
Identification code	21-2034-0-1-051	1986 actual	1987 est.	1988 est.	1989 est.
Program by activities:					
Direct program:					
00.0101	Ammunition		2,025,733	1,764,945	152,126
00.0201	Ammunition production base support		168,542	148,317	11,798
00.9101	Total direct program		2,194,275	1,913,262	163,924
01.0101	Reimbursable program		147,500	147,500	
10.0001	Total		2,341,775	2,060,762	163,924
Financing:					
Offsetting collections from:					
11.0001	Federal funds(-)		95,800	-95,800	
13.0001	Trust funds(-)		-51,700	-51,700	
21.4002	Unobligated balance available, start of year:				-281,013
24.4002	For completion of prior year budget plans				
24.4002	Unobligated balance available, end of year:			281,013	117,089
24.4002	For completion of prior year budget plans				
40.0001	Budget authority (Appropriation)		2,194,275	2,194,275	

4-7 January 1987

Procurement of Ammunition, Army		05 Jan 87	
Program and Financing (in Thousands of dollars)		FISCAL YEAR 1989	
Budget Plan (amounts for PROCUREMENT actions programmed)		Obligations	
Identification code	21-2034-0-1-051	1986 actual	1987 est. 1988 est. 1989 est. 1986 actual 1987 est. 1988 est. 1989 est.
Program by activities:			
Direct program:			
00.0101	Ammunition	1,914,063	1,668,355
00.0201	Ammunition production base support	280,692	247,009
00.9101	Total direct program	2,194,755	1,915,364
01.0101	Reimbursable program	133,500	133,500
10.0001	Total	2,328,255	2,048,864
Financing:			
Offsetting collections from:			
11.0001	Federal funds(-)	-81,800	-81,800
13.0001	Trust funds(-)	-51,700	-51,700
24.4002	Unobligated balance available, end of year:		
	For completion of prior year budget plans		279,391
40.0001	Budget authority (Appropriation)	2,194,755	2,194,755

4-8 January 1987

05 Jan 87

Procurement of Ammunition, Army
Program and Financing (in thousands of dollars) SUMMARY

Identification code	21-2034-0-1-051	Budget Plan (amounts for PROCUREMENT actions programmed)				Obligations			
		1986 actual	1987 est.	1988 est.	1989 est.	1990 actual	1987 est.	1988 est.	1989 est.
Program by activities:									
Direct program:									
00.0101	Ammunition	1,864,574	1,732,150	2,025,733	1,914,063	2,000,757	1,564,486	1,994,573	1,914,283
00.0201	Ammunition production base support	470,701	355,000	168,542	280,692	365,448	547,821	196,702	276,557
00.9101	Total direct program	2,335,275	2,087,150	2,194,275	2,194,755	2,366,205	2,112,307	2,191,275	2,190,840
01.0101	Reimbursable program	102,409	143,900	147,500	133,500	98,279	152,586	147,500	133,500
10.0001	Total	2,437,684	2,231,050	2,341,775	2,328,255	2,464,484	2,264,893	2,338,775	2,324,340
Financing:									
Offsetting collections from:									
11.0001	Federal funds(-)	-74,022	96,000	-95,800	81,800	73,924	-96,000	-95,800	-81,800
13.0001	Trust funds(-)	-28,129	-47,900	-51,700	-51,700	19,374	-47,900	-51,700	-51,700
14.0001	Non-Federal sources(-)	-258				259			
17.0001	Recovery of prior year obligations					235,999			
Unobligated balance available, start of year:									
21.4002	For completion of prior year budget plans	-178,100	72,562			-269,893	-423,408	-389,565	-392,565
21.4003	Available to finance new budget plans	-46,832				178,100	-72,562		
21.4007	Reprogrammed from/to prior year budget plans	169,373	72,562			169,373	72,562		
22.4001	Unobligated balance transferred to other accounts								
23.4001	Unobligated balance rescinded: Appropriation	21,292				21,292			
23.4002	Reduction pursuant to P.L. 99-177 in unobligated								
Unobligated balance available, end of year:									
24.4002	For completion of prior year budget plans	72,562				423,408	389,565	392,565	396,480
24.4003	Available to finance subsequent year budget plans	1,267				1,267			
25.0001	Unobligated balance lapsing								
40.0001	Budget authority (Appropriation)	2,374,837	2,087,150	2,194,275	2,194,755	2,374,837	2,087,150	2,194,275	2,194,755
Relation of obligations to outlays:									
71.0001	Obligations incurred, net					2,370,927	2,120,993	2,191,275	2,190,840
72.4001	Obligated balance, start of year					3,083,586	3,244,350	3,398,923	3,568,146
74.4001	Obligated balance, end of year					3,244,350	-3,398,923	-3,568,146	3,690,562
77.0001	Adjustments in expired accounts					41,491			
78.0001	Adjustments in unexpired accounts					235,999			
90.0001	Outlays					1,932,674	1,966,420	2,022,052	2,068,424

1-9 January 1987

Procurement of Ammunition, Army
Object Classification (in Thousands of dollars) SUMMARY

05 Jan 87

Identification code	21-2034-0-1-051	1986 actual	1987 est.	1988 est.	1989 est.
Direct obligations:					
Other services:					
125 004	Other	236,160	211,231	219,128	226,124
126 001	Supplies and materials	2,125,433	1,901,076	1,972,147	1,964,716
131 001	Equipment	4,612			
199 001	Total Direct obligations	2,366,205	2,112,307	2,191,275	2,190,840
Reimbursable obligations:					
Other services:					
225 004	Other	9,828	12,190	13,350	13,350
226 001	Supplies and materials	88,451	113,534	120,150	120,150
231 001	Equipment		26,862	14,000	
299 001	Total Reimbursable obligations	98,279	152,586	147,500	133,500
999 901	Total obligations	2,464,484	2,264,893	2,338,775	2,324,340

4-10 January 1987

PROCUREMENT OF AMMUNITION, ARMY

Section 2:

Budget Activity Justification

Activity 1 - Ammunition

Activity 2 - Ammunition Production Base Support

4-11 January 1987

Department of the Army Annual Budget Estimate JUSTIFICATION	Appropriation PROCUREMENT OF AMMUNITION, ARMY		FY 1988/89 Budget	
	(Thousands of Dollars)			
	Actual	Estimate	Estimate	Estimate
Activity 1 - Ammunition	FY 1986	FY 1987	FY 1988	FY 1989
Direct Budget Plan	\$1,864,574	\$1,732,150	\$2,025,733	\$1,914,063

Part 1 - PURPOSE AND SCOPE

The FY 1988/89 request provides for worldwide training consumption, improvements in near-term readiness and combat sustainability, and the acquisition of war reserve stocks for use during wartime. Families of ammunition included in the request are artillery, mortar, tank, small arms, propelling charges, and other ammunition items. Major portions of the funds being requested are identified to recently developed tank rounds and artillery ammunition.

Part 2 - JUSTIFICATION OF FUNDS REQUESTED

The FY 1988 program provides for worldwide training consumption and losses to inventory through the FY 1988 funded delivery period, increases U.S. Army readiness in support of the FY 1992 authorized acquisition objective and maintains an active ammunition-production base for modernization and training-type ammunition. The FY 1988 program includes over 100 different types of ammunition including \$366.0 million for tank ammunition; \$652.7 million for artillery ammunition; \$128.6 million for propelling charges; \$172.7 million for small arms ammunition; \$171.5 million for mortar ammunition; \$143.4 million for rockets; \$171.7 million for mines/countermine; and \$219.1 million for other ammunition, spares, and components for tests and renovation. The FY 1989 program provides for worldwide training consumption and loss to inventory through the FY 1989 funded delivery period, increases U.S. Army readiness in support of the 1993 authorized acquisition objectives and maintains an active ammunition production base for modernization and training ammunition. The FY 1989 program includes \$325.0 million for tank ammunition; \$619.3 million for artillery ammunition; \$116.0 million for propelling charges; \$255.7 million for small arms ammunition; \$55.1 million for mortar ammunition; \$165.6 million for rockets; \$153.2 million for mines/countermines; and \$224.1 million for other ammunition, spares, and components for tests and renovation.

Part 2 - JUSTIFICATION OF FUNDS REQUESTED (Continued)

Procurement new starts in FY 1988 include modern 60mm Illumination and Smoke cartridges for the Light-Weight Company Mortar System (LWCMS), a 1/10 range training round for the 120mm Mortar System, 105mm Rocket Assisted Projectile for the 105mm Light Howitzer, and the Tactical Explosive System (TEXS). Procurement new starts in FY 1989 include an improved 105mm Armor Piercing, Fin Stabilized, Discarding Sabot (Traced) (APFSDS-T) tank round (XM900E1), an 8-Inch Sense and Destroy Armor Munitions (SADARM) projectile, and the Wide Area Side Penetrating Munition (WASPM). Details on these programs are included in the following category breakout of the FY 1988/89 program.

4-13 January 1987

ITEM BREAKOUT, FY 1988/89

<u>TYPE</u>	<u>\$ (Millions)</u>	<u>REMARKS</u>
<u>Small Arms Ammunition</u>	(FY 1988 - \$172.7 Million, FY 1989 - \$255.7 Million)	
	<u>FY 1988</u>	<u>FY 1989</u>
10 Gage Shotgun Cartridge	.2	The FY 1989 requested procurement supports reveille and retreat salute as well training requirement with the procurement of 347,000 rounds.
12 Gage Shotgun Cartridge	.1	The FY 1989 request supports training requirements with the procurement of 166,000 rounds.
Cal .22 Cartridge	.2	The requested procurement supports training requirements. The FY 1988 request is for 2,779,000 rounds and the FY 1989 request is for 4,192,000 rounds of the caliber .22 ball cartridges.
5.56mm Cartridge	47.4*	56.4*
		The FY 1988 and FY 1989 budget request includes funding for 5.56mm Ball, Tracer, and Blank ammunition for the M-16 rifle and Squad Automatic Weapon (SAW) in support of both war reserve and training requirements. The FY 1988 request is for 329,360,000 and the FY 1989 request is for 359,526,000 rounds of various types of 5.56mm cartridges.
7.62mm Cartridge	28.6**	30.4**
		The FY 1988 and FY 1989 budget request includes Ball, Tracer and Match ammunition for war reserves and training requirements. The FY 1988 request is for 115,990,000 and the FY 1989 program is for 118,525,000 rounds of various types of 7.62mm cartridges.
Cal .38 Cartridge	.2	.6
		The FY 1988 request for 1,306,000 and the FY 1989 program of 4,824,000 cartridges supports both war reserve and training requirements.

* \$.2 Million in FY 1988 and \$0.6 Million in FY 1989 included in Items Under \$2 million line item.
 ** \$1.3 Million in FY 1988 and \$1.2 Million in FY 1989 included in Items Under \$2 million line item.

TYPE	\$ (Millions)		REMARKS
	FY 1988	FY 1989	
Cal .45 Cartridge	1.5*	1.9*	This FY 1988 and FY 1989 request supports war reserve and training requirements with the procurement of 12,939,000 cartridges in FY 1988 and 15,733,000 cartridges in FY 1989.
Cal .50 Cartridge	2.7**	4.7**	This FY 1988 and 1989 request supports training requirements with the procurement of 2,007,000 rounds in FY 1988 and 4,226,000 rounds in FY 1989.
20mm Cartridge	16.7	17.3	The requested procurement supports training requirements. The FY 1988 request is for 4,821,000 and the FY 1989 is for 4,805,000 rounds.
25mm Cartridge	17.9	70.4	The FY 1988 request includes the Target-Practice (Traced) (TPT) and High-Explosive-Incendiary (HEI) rounds in support of war reserve and training requirements. The AP Training round (XM910) will be procured for the first time in FY 1989. The FY 1988 request is for 1,070,000 TPT cartridges in the amount of \$11.0 million and 2,960,000 25mm HEI-T cartridges in the amount of \$6.9 million.
30mm Cartridge	-	4.5	The FY 1989 budget request is for 409,000 Target-Practice (TP) rounds in support of training requirements.
40mm Cartridge	57.5***	68.9***	The FY 1988 budget request is for 40mm High-Explosive Dual-Purpose (HEDP) High-Velocity ammunition and the 40mm smoke and training rounds used in the MK19 machine gun and M203 grenade launchers attached to the M16/M16A1 rifle. The request is for 5,822,000 rounds in FY 1988 and 6,779,000 rounds in FY 1989.

*\$2 Million in FY 1988 and \$.3 in FY 1989 included in Items Under \$2 million item.

**\$.4 Million in FY 1988 and \$.1 Million in FY 1989 included in Items Under \$2 million item.

***\$3.0 Million in FY 1988 and \$3.8 Million in FY 1989 included in Items Under \$2 million item.

4-15 January 1987

TYPE	<u>\$ (Millions)</u>		REMARKS
	<u>FY 1988</u>	<u>FY 1989</u>	
<u>Mortar Ammunition (FY 1988 - \$171.5 Million, FY 1989 - \$55.1 Million)</u>			
81mm (Improved) Cartridge	65.1	4.5	The FY 1988 request includes the 81mm High-Explosive (HE) rounds in support of war reserve requirements. The FY 1988 and FY 1989 procurement supports annual training and the depot level requirements for the M880 1/10 range mortar practice round with refurbishing kits.
60mm (LWCHMS) Cartridges	39.1	4.5	The FY 1988 and FY 1989 procurement supports war reserve and training requirements for the M720 High Explosive, M721 Illumination, and M722 Smoke rounds for the Lightweight Company Mortar System in support of the Army's new light Infantry Division.
4.2-Inch Cartridge	19.7	-	The FY 1988 procurement of 229,000 of 4.2-inch HE M329A2 support war reserve and training requirements.
120mm Cartridge	47.6	46.1	The 120mm system will be the new Army heavy mortar. The FY 1988 and FY 1989 buy will support training and war reserve requirements. The FY 1988 request is for High Explosive, Smoke, Illumination, and 1/10 Range Practice rounds. The FY 1989 request is for 124,000 rounds of the 120mm Cartridge.
<u>Tank Ammunition (FY 1989 - \$366.0 Million, FY 1989 - \$325.0 Million)</u>			
105mm Tank Ammunition	75.3	77.3	The budget request includes the Armor-Piercing Fin-Stabilized Discarding Sabot-Tracer (APFSDS-T) rounds to support war reserve objectives, and Discarding Sabot-Target Practice (DS-TP) and Target Practice with Tracer (TPT) cartridges for training requirements. The FY 1988 request is for 241,000 105mm DS-TP cartridges in the amount of \$37.8 million; 51,000 105mm APFSDS-T cartridges in the amount of \$32.5

4-16 January 1987

<u>TYPE</u>	<u>\$ (Millions)</u>	<u>REMARKS</u>	
<u>FY 1988</u>	<u>FY 1989</u>		
120mm Tank Ammunition	277.6	232.6	
	<p>million; and 41,000 105mm TPT cartridges in the amount of \$4.9 million. The FY 1989 request is for 141,000 105mm TPT cartridges in the amount of \$17.5 million; 177,000 105mm DS-TP cartridges in the amount of \$28.9 million; and 16,000 105mm APFSDS-T cartridges in the amount of \$30.9 million. The request amounts build war reserves of modern tank ammunition to support the 105mm tank fleet and enhance the Army's ability to conduct realistic tank gunnery training in support of our readiness objectives.</p>		<p>The budget request includes APFSDS-T and HEAT rounds to support war reserve objectives, and DS-TP and Target Practice Cone-Stabilized Discarding Sabot-Tracer (TPCSDS-T) rounds for training requirements. The FY 1988 request is for 79,000 120mm APFSDS-T cartridges in the amount of \$77.3 million; 68,000 120mm TPT cartridges in the amount of \$63.6 million; 114,000 120mm TPCSDS-T cartridges in the amount of \$83.7 million; and 31,000 120mm HEAT cartridges in the amount of \$53.0 million. The FY 1989 request is for 90,000 120mm APFSDS-T cartridges in the amount of \$85.6 million; 15,000 120mm HEAT cartridges in the amount of \$25.2 million; 50,000 120mm TP-T in the amount of \$45.4 million; and 106,000 120mm TPCSDS-T cartridges in the amount of \$76.3 million. The requested program is required to support the fielding of the M1A1 tank with ammunition capable of defeating threat armor, and to provide tank gunnery training with the M1A1 tank in support of our readiness objectives.</p>
35mm Subcal for Tank	2.0	1.9	
	<p>The FY 1988 and 1989 request is for 40,000 rounds per year to support training requirements.</p>		
165mm TP Cartridge	-	7.7	
	<p>The FY 1989 procurement of 20,000 rounds supports training requirements.</p>		4-17 January 1987

TYPE	\$ (Millions)		REMARKS
	FY 1988	FY 1989	
Grenade, Smoke Screening	11.1	5.5	Electrically initiated smoke screening grenades are used by armored vehicles to obscure themselves from enemy observation. The FY 1988 request is for 216,000 grenades and the FY 1989 request is for 107,000 grenades.
<u>Artillery Ammunition (FY 1989 - \$652.7 Million, FY 1989 - \$619.3 Million)</u>			
105mm Artillery Ammunition	29.6	11.5	The budget request includes procurement of the initial war reserve stockpile for the XM913 RAP round, which is required to support the fielding of the M119 howitzer. It also includes acquisition of M314 illumination, and M395 blank rounds for training and salute requirements.
155mm HE, ICM (DP)	98.7	103.1	This High Explosive (HE), Improved Conventional Munition (ICM) projectile is a dual-purpose (DP) anti-armor/anti-personnel round. Funding is required to meet war reserve sustainability objectives. The FY 1988 request is for 235,000 projectiles and the FY 1989 request is for 236,000 projectiles. The projectile, containing 88 dual-purpose submunitions, is fired over an enemy target area. At the specified time, a mechanical-time fuze initiates the expulsion charge and ejects the submunitions to descend on the target area and detonate on impact.
155mm ADAM/RAAMS	77.1	61.1	The Area Denial Artillery Munition (ADAM) and Remote Anti-Armor Mine Systems (RAAMS) projectiles are artillery delivered mines, which provide the field commander with a quick-reaction defensive or offensive mine system to oppose dismounted enemy forces or mounted armor attacks. The ADAM projectile contains 36 anti-personnel mines, while the RAAMS projectile contains nine anti-armor mines. After projectile firing, the mines are ejected over the target area. Upon reaching the ground, individual ADAM mines eject trip wires and function when

<u>TYPE</u>	<u>\$ (Millions)</u>	<u>REMARKS</u>
	<u>FY 1988</u>	<u>FY 1989</u>
155mm Copperhead	100.6	105.6
		<p>The FY 1988 and FY 1989 budget request is in support of war reserve requirements for the 155mm Copperhead projectile. The continued procurement of Copperhead is critical to improving the artillery's primary role, which is the delivery of timely, accurate, and lethal fire support for engaged maneuver units. Copperhead, the only precision guided projectile in production, provides the capability to destroy specific hard-point targets such as tanks, infantry fighting vehicles, and self-propelled artillery with a high probability of kill. There is no other artillery ammunition that can satisfy this requirement. The FY 1988 request is for 2,771 projectiles; the FY 1989 request is for 2,959 projectiles.</p>
155mm Smoke	34.0	12.6
		<p>The 155mm smoke round provides a smoke screening capability with the 155mm howitzer. The FY 1988 and</p>

4-19 January 1987

<u>TYPE</u>	<u>\$ (Millions)</u>	<u>REMARKS</u>
	<u>FY 1988</u>	<u>FY 1989</u>
155mm Illumination	43.6	-
		FY 1989 procurement of 90,000 and 32,000 projectiles, respectively, are required to support war reserve objectives and training.
		The M485 illumination round is being procured to meet war reserve stockpile requirements for battlefield illumination, and to support peacetime training. The FY 1988 request for 190,000 projectiles is required to support training requirements.
155mm Training	14.5	14.4
		Budget request supports acquisition of the low noise M804 artillery training projectile, required to support training in USAREUR and US at training areas with environmental noise limitations. The FY 1988 request is for 101,000 projectiles and 98,000 projectiles in FY 1989.
155mm Basebleed	70.1	107.4
		This High Explosive (HE) Improved Conventional Munitions (ICM) projectile is a dual purpose (DP) anti-armor/anti-personnel round. Funding is required to meet war reserve sustainability objectives. This round differs from the basic ICM round in that it has extend range capabilities. The FY 1988 and FY 1989 procurement of 104,000 and 153,000 projectiles, respectively, support war reserve needs.
8-Inch Rocket Assisted Projectile (RAP)	42.4	41.4
		The M650 RAP is an extended range projectile for use with the 8-inch self-propelled howitzer. The round can be employed with or without use of the rocket motor. For extended range the rocket motor cap is removed and the round is fired. The rocket motor ignites and boosts the round, thus extending its normal ballistic trajectory. The FY 1988 buy of

4-20 January 1987

<u>TYPE</u>	<u>\$ (Millions)</u>	<u>REMARKS</u>
	<u>FY 1988</u>	<u>FY 1989</u>
8-Inch Anti-Armor (SADARM)	-	19.8
		43,000 rounds in the amount of \$42.4 million and the FY 1989 buy of 41,000 rounds in the amount of \$41.4 million supports war reserve requirements.
		The FY 1989 request supports the initial procurement of the 8-inch SADARM projectile, which employs improved sensing submunitions for application against armor.
155mm Binary Projectile	--	--
		The FY 1988 and FY 1989 procurement continues the war reserve acquisition of the 155mm binary chemical projectile that was begun with the FY 1986 budget. This round is required to provide a modern, safe binary chemical deterrent stockpile to replace the less effective and increasingly environmentally hazardous unitary stockpile.
Primer, Percussion	2.6	.8
		The M82 percussion primer is used to initiate 155mm and 8-inch propelling charges that propel the artillery projectiles to their targets. The FY 1988 and FY 1989 programs are required to balance primers to inventories of 155mm and 8-inch projectiles that support war reserve and training requirements.
Nuclear Materiel	--	--
		The FY 1988 and FY 1989 budget request includes funding for support materiel and the 155mm nuclear projectile.
<u>Propelling Charges (FY 1988 - \$128.6 Million, FY 1989 - \$116.0 Million)</u>		
155mm Propelling Charges	128.6	116.0
		The 155mm propelling charges are procured to balance with inventories of 155mm projectiles procured in

4-21 January 1987

<u>TYPE</u>	<u>\$ (Millions)</u>	<u>REMARKS</u>
	<u>FY 1988</u>	<u>FY 1989</u>
<p>support of war reserve and training requirements. The FY 1988 request is for 441,000 155mm propelling charges and the FY 1989 request is for 249,000.</p>		
<u>OTHER (FY 1988 - \$534.4 Million, FY 1989 - \$542.6 Million)</u>		
Hand Grenades, All Types	1.7	8.7
Signals	16.0	10.4
Simulators	6.4	12.0
Rockets	143.4	165.6
Demolition Munitions	28.5	23.3
Fuze, Mechanical Time, Super	54.9	30.8

4-22 January 1987

<u>TYPE</u>	<u>\$ (Millions)</u>	<u>REMARKS</u>
	<u>FY 1988</u>	<u>FY 1989</u>
	-	18.3
Fuze, Electronic Time		
	24.2	6.3
Fuze, Proximity		

High-Explosive and Rocket-Assisted projectiles, as well as in the registration round for the 8-inch nuclear projectile. These fuzes are used when a choice of timed or super-quick action is required. The internal mechanism controls the detonation of the round or the expulsion of the projectile's cargo after the round is fired if the timing function is selected. If set for super-quick action, the projectile detonates upon impact. The FY 1988 request is for 951,000 fuzes and the FY 1989 request is for 395,000 fuzes. The FY 1988 and FY 1989 programs are required to correct the existing fuze to projectile imbalance and to support war reserve objectives.

The budget request includes procurement of initial war reserve stockpile of 146,000 fuzes for the XM913 RAP round, which is required to support the fielding of the M119 howitzer. Also includes acquisition of M314 illumination and M395 blank for training and salute requirements.

The budget request supports acquisition of M732E2 proximity fuzes for the use with existing and future RAP rounds. Existing M732 fuze will not function in these rounds. The FY 1988 request begins procurement necessary to balance fuzes to using projectiles. The FY 1988 request is for 136,000 fuzes and the FY 1989 request is for 53,000 fuzes. Failure to fund will result in RAP rounds in inventory with no usable proximity fuze.

<u>TYPE</u>	<u>\$ (Millions)</u>	<u>REMARKS</u>
	<u>FY 1988</u>	<u>FY 1989</u>
Mine/Countermine	171.7*	153.2*
		<p>The FY 1988 and FY 1989 request includes the Modular Pack Mine System (MOPMS), and Volcano, which is a helicopter or ground dispensed mine systems similar to GATOR. All are scatterable mine systems and contain both antipersonnel and antitank mines. Also included are the drill mines to support training on the GEMSS and Volcano dispensing systems. In addition, this FY 1988 and FY 1989 request includes the Mine Clearing Line Charge (MICLIC) system, a rocket device designed to breach paths through enemy mine fields and obstacles.</p>
Nitroguanidine	12.8	9.2
		<p>Nitroguanidine is a colorless, crystalline compound required in production of the triple-base propellant used in extended-range propelling charges for artillery and tank ammunition. The FY 1988 and FY 1989 request continues production to meet Army requirements.</p>
Ammunition	21.7	21.3
		<p>The FY 1988 and FY 1989 budget request includes funding for components/support items for special tests, renovation of field stock, and weapons components in support of proof and acceptance testing.</p>
War Reserve Stockpiling	35.0	35.0
		<p>The FY 1988/89 funding is requested to procure explosives and propellants in support of the Department's sustainability objectives. These products would be used primarily to meet mobilization requirements until production could be expanded to meet wartime requirements. In the event of a catastrophic explosives/propellants plant failure, specific items could be used until production could be resumed.</p>

*Includes \$1.2 million in FY 1988 and \$1.9 million in FY 1989 in Items Under \$2 million item item.

4-24 January 1987

<u>TYPE</u>	<u>\$ (Millions)</u>	<u>REMARKS</u>
	<u>FY 1988</u>	<u>FY 1989</u>
Other	18.1*	48.5*
	Funding in support of equipment unique to ammunition production/depot operations, Host Nation Support agreement, spares and repair parts, and other small ammunition programs are included in the FY 1988 and FY 1989 budget request.	

*Includes \$.7 million in FY 88 and FY 1989 in Items Under \$2 million item item.

4-25 January 1987

WAR RESERVE AMMUNITION, TRAINING AMMUNITION AND NON-HARDWARE PROGRAMS, FY 1988 AND FY 1989
(\$ MILLIONS)

War Reserve Ammunition:	FY 1988	FY 1989
Training Ammunition:	\$1420.5	\$1294.5
Non-Hardware Programs:	525.2	542.1
	80.0	77.5
	<u>\$2,025.7</u>	<u>\$1914.1</u>

In order to support worldwide training consumption and increase US Army readiness, the following ammunition is being procured:

AMMUNITION	FY 1988		FY 1989	
	QUANTITY (THOUSANDS)	DOLLARS (MILLIONS)	QUANTITY (THOUSANDS)	DOLLARS (MILLIONS)
Cartridge, 5.56mm Ball	58,208	8.2	56,642	8.2
Cartridge, 5.56mm Blank	169,801	16.3	158,985	15.6
Cartridge, 5.56mm Blank for Squad	30,212	5.9	-	-
Automatic Weapon				
Cartridge, 5.56mm Ball M16/A2	37,926	7.7	92,187	19.4
Cartridge, 5.56mm Tracer M16A2	10,336	2.6	10,336	2.7
Cartridge, 5.56mm Plastic	8,000	2.7	8,000	2.2
Cartridge, 5.56mm Tracer Clip	1,929	.5	2,309	.6
Cartridge, 7.62mm Linked 4 Ball/Tracer	53,343	14.3	45,098	12.6
Cartridge, 7.62mm Ball Linked	-	-	9,777	2.5
Cartridge, 7.62mm Match	998	.3	322	.1
Cartridge, 7.62mm Blank Linked	57,922	13.0	53,166	12.1
Cartridge, 7.62mm Special Ball	3,654	1.0	3,654	1.0
Cartridge, 7.62mm Ball OHF	-	-	6,194	2.1
Cartridge, Caliber .22 Match	2,779	.2	4,192	.3
Cartridge, Caliber .38 Special Ball Wadcutter	-	-	1,079	.1
Cartridge, Caliber .38 Special Ball	1,306	.2	3,707	.5
Cartridge, Caliber .45 Ball	11,391	1.3	11,765	1.4
Cartridge, Caliber .45 Ball Wadcutter	-	-	938	.1
Cartridge, Caliber .45 Match	1,548	.2	2,246	.3
Cartridge, 10 Gage Blank	-	-	347	.2
Cartridge, 12 Gage #9 Shotgun	-	-	166	.1
Cartridge, Caliber .50 Plastic	1,810	2.3	2,900	3.0
Cartridge, Caliber .50 4 Ball/Tracer w/M9 Link	-	-	887	1.5
Cartridge, Caliber .50 Blank Linked	-	-	449	.3

	FY 1988		FY 1989	
	QUANTITY (THOUSANDS)	DOLLARS (MILLIONS)	QUANTITY (THOUSANDS)	DOLLARS (MILLIONS)
Cartridge, Caliber .50 Dummy	197	.4	-	-
Cartridge, 20mm 4 Target-Practice Tracer M55/1 TP-T M220	1,324	4.0	1,288	4.1
Cartridge, 20mm Linked Target-Practice Tracer M220	3,497	12.6	3,517	13.1
Cartridge, 25mm, AP Training	-	-	804	36.2
Cartridge, 25mm Target Practice-Tracer	1,070	11.0	1,388	14.8
Cartridge, 25mm HEI-T	20	.5	20	.5
Cartridge, 30mm Target Practice	-	-	409	4.5
Cartridge, 40mm TP F/MK19	2,375	28.5	2,292	26.3
Cartridge, 40mm Target Practice	1,807	3.2	2,127	3.9
Cartridge, 40mm White Star Parachute	40	1.0	40	1.0
Cartridge, 40mm Green Star Parachute	13	.2	13	.2
Cartridge, 40mm Red Smoke Marker	7	.1	7	.1
Cartridge, 40mm Green Smoke Marker	18	.3	-	-
Cartridge, 40mm Yellow Smoke Marker	13	.2	13	.3
Cartridge, 40mm Red Star Parachute	7	.1	7	.1
Primer, M82	491	.8	448	.8
Lightweight Multipurpose Weapon Trainer	1,007	3.2	1,400	3.2
Hydra 70 Rocket, HE/RS	12	5.8	12	6.2
Hydra 70 Rocket, Smoke	11	6.0	12	4.4
Hydra 70 Rocket, MPSM Practice	24	14.1	23	14.0
Hydra 70 Rocket, M274 Practice	128	38.2	72	23.9
Hydra 70 Rocket, HE/PD	21	6.9	76	26.2
Grenade, Hand, Smoke, HC AN-MP	-	-	259	2.9
Grenade, Hand, Green Smoke, M18	129	1.5	165	2.0
Grenade, Hand, Yellow Smoke	-	-	82	1.1
Rocket, Tng, 35mm Practice	582	6.3	600	6.5
Fuze, Hand Grenade, Practice	284	.2	2,559	2.2
Smoke Pot, Floating	24	3.9	-	-
Signal Kit, Personnel Distress	-	-	11	.2
Signal Illuminating, Ground, White Star Cluster	29	.8	29	.8
Signal, Illuminating, Ground, Green Star	58	1.4	61	1.5
Signal, Smoke and Illumination, MK13	2	.1	2	.1
Flare Surface Trip	63	1.2	119	2.3
Simulator, Projectile, Ground Burst	386	2.9	859	6.6
Simulator, Flash, Artillery (WESS)	184	.2	1,734	2.3

4-27 January 1987

AMMUNITION	FY 1988		FY 1989	
	QUANTITY (THOUSANDS)	DOLLARS (MILLIONS)	QUANTITY (THOUSANDS)	DOLLARS (MILLIONS)
Simulator, Hand Grenade	421	3.1	355	2.7
Simulator, Booby Trap, Illuminating	-	-	69	.1
Simulator, Booby Trap, Whistling	148	.3	144	.3
Cord, Detonating, Type 1	-	-	2,333	.2
Charge, Demolition, Shaped 40 lb	8	2.8	8	2.9
Demolition Kit, Cratering, M180	2,223	4.5	2,223	2.8
Cap, Blasting	171	.5	213	.3
Energy Cartridge, Anti-personnel	22	.1	32	.1
Energy Cartridge, Anti-tank Practice	12	.1	19	.1
Fuze Proximity, M732	39	4.9	37	4.6
Fuze Mechanical, Time, Super Quick M582	194	11.6	145	11.6
Fuze Mechanical, Time, Super Quick M577	50	2.8	51	5.8
Fuze, Blasting, Time	-	-	1,192	.2
Igniter, Fuze Blasting	-	-	159	.4
Cartridge, 105mm, Discarding Sabot-Target Practice	235	37.8	172	28.9
Cartridge, 105mm, Target Practice-Tracer	37	4.9	132	17.5
Cartridge, 120mm Target Practice-Tracer	70	63.6	51	45.4
Cartridge, 120mm Target Practice Cone-Stabilized-Discarding-Sabot-Tracer	140	83.7	129	76.3
Cartridge, Subcal 35mm f/Tank	40	2.0	40	1.9
Cartridge, 60mm, Smoke WPLWCMS	5	.5	5	.5
Cartridge, 60mm, Illum LWCMS	8	1.3	-	-
Cartridge, 60mm, HE	8	.8	-	-
Cartridge, 81mm, Improved 1/10 Range Training	34	4.8	31	4.5
Cartridge, 81mm, Improved High-Explosive	28	1.8	-	-
Cartridge, 4.2-Inch HE	170	14.6	-	-
Mine, Anti-personnel, Practice	50	4.8	-	-
Cartridge, 105mm, Blank, M395	86	3.2	-	-
Cartridge, 105mm, Illum, M314	34	7.4	-	-
Cartridge, 155mm, Illum, M485	37	9.0	-	-
Cartridge, 165mm, TP	-	-	20	7.7
Cartridge, 120mm, TNG, 1/10 Rng	16	2.1	9	1.3
Cartridge, 155mm, Tng	101	14.5	98	14.4
Canister Mine, Practice	5	1.6	28	7.7
Line Charge, Inert M68	116	1.2	178	1.9
Rocket Motor, Mine-Clearing-Line-Change	659	2.6	740	3.0
TOTAL		525.2		542.1

4-28 January 1987

FY 1988/89

Appropriation

Department of the Army
Annual Budget Estimates

Procurement of Ammunition, Army

JUSTIFICATION

Budget

Program or Budget Project Account Activity 2 - Ammunition Production Base Support	(Thousands of Dollars)			
	Actual FY1986	Estimate FY1987	Estimate FY1988	Estimate FY 1989
Direct Obligation or Direct Budget Plan	470,701	355,000	168,542	280,692

Part 1 - PURPOSE AND SCOPE

The FY1988 and FY1989 program provides for the support of plants in active production and required for mobilization; the establishment of initial-production facilities, modernization, and expansion of production capability for ammunition; modernization of Jefferson Proving Ground; layaway of industrial plants and equipment; and components for prove-out.

Part 2 - JUSTIFICATION OF FUNDS REQUESTED

	FY1986 (millions)	FY1987 (millions)	FY1988 (millions)	FY1989 (millions)
<u>Provision of Industrial Facilities (PIF)</u>	262.6	135.9	132.9	246.0
Production Support and Equipment				
Replacement (PS&ER)	(36.8)	(38.3)	(36.2)	(42.0)
Initial Production Facilities (IPF)	(157.0)	(18.2)	(11.4)	(40.4)
Modernization (MOD)	(42.2)	(44.9)	(30.5)	(94.5)
Expansion (EXP)	(26.6)	(34.5)	(54.8)	(69.1)
<u>Production Base Modernization</u>	98.0	186.0		
<u>Jefferson Proving Ground Modernization</u>	1.9	2.2		1.0
<u>Layaway of Industrial Facilities</u>	17.5	22.5	19.4	19.4
<u>Prove-out of Production Facilities</u>	13.3	8.6	16.2	14.3
Chemical Demilitarization Program	77.3			
<u>TOTAL PRODUCTION BASE SUPPORT AMMUNITION</u>	<u>470.6</u>	<u>355.2</u>	<u>168.5</u>	<u>280.7</u>

Provision of Industrial Facilities

(\$ Thousands)

FY1988	FY1989
<u>132,961</u>	<u>245,989</u>

Funds requested for Provision of Industrial Facilities in FY 1988 and FY 1989 provide industrial capabilities for manufacturing new or existing ammunition. The major efforts are divided among initial-production capability for new items entering the inventory, expansion of existing capacity to meet either peacetime or mobilization requirements, and finally modernization of existing facilities to adjust to new technology and changing ammunition requirements. The majority of funds requested are concentrated in modernization and expansion efforts. In FY 1988 and FY 1989, \$125.0 and \$124.0 million (including construction), respectively, are requested for modernization and expansion. In addition, \$36.2 million in FY 1988 and \$42.0 million in FY 1989 are requested for production support and equipment replacement at active facilities.

The FY 1988 projects are as follows:

An initial production facility in support of the 155mm XM864 Base Burner Assembly will be established at a cost of \$7.1 million. The facility is required to meet planned procurement in FY 1990. The location of the facility has not been determined.

Establish an initial production facility to load, assemble and pack (LAP) the sensor fuze weapon (SFW) at Kansas Army Ammunition Plant, Parsons, Kansas, in support of Air Force requirements. Funding in the amount of \$3.3 million is requested.

Reestablish a production capability at McAlester Army Ammunition Plant, McAlester, Oklahoma, for press loading 16"/50 projectiles to meet Five Year Defense Program requirements. Funding in the amount of \$1.0 million is requested.

Complete modernization and expansion efforts at the Holston Army Ammunition Plant, Kingsport Tennessee. In FY1988 \$7.1 million is requested for a productivity improvement effort to modernize the composition A-5 drying process and to upgrade nitric acid production facilities required to support explosive production.

Funding in the amount of \$8.1 million is requested to complete upgrading the remaining half of the automated single base facility (CASBL) located at the Radford, Virginia. The project is required to complete and incorporate deficiency corrections, established during prove out of the initial half of the facility.

Correct safety deficiencies at three government munitions producing installations: Milan Army Ammunition Plant, Milan, Tennessee; Radford Army Ammunition Plant, Radford, Virginia; and Lone Star Ammunition Plant, Texarkana, Texas. In FY1988 \$3.6 million is requested to provide for lightning protection, safety barricade replacement and rehabilitation of an existing chemical laboratory.

Funding in the amount of \$11.7 million is requested to correct existing security deficiencies at nine Army ammunition plants. Security improvements will include installation of intrusion detection systems, installation of security fencing, purchase and installation of three new ammunition storage ingloos.

Omnibus design funds in the amount of \$30.5 million are required for the initiation and/or continuation of the Modernization Expansion and Production Support and Equipment Replacement Programs at various Army Ammunition Plants.

Expansion of production facility at Louisiana Army Ammunition Plant to produce the four major components for the shell metal parts for the XM864 Projectile. Request \$12.2 million to procure the production equipment required to increase production capacity to meet Five Year Defense Plan (FYDP) requirements.

In FY1988 \$12.1 million is requested for Musall design, Phase 1 High Melt Explosive (HMX). The location of the facility has not been determined.

Also included in the FY1988 request is funding in the amount of \$36.3 million for the necessary production support and equipment replacement for plants in active status.

FY1989 PROJECTS ARE AS FOLLOWS:

To establish an initial production facility at an undetermined commercial site and to provide the capability to assemble and test XM621 XM767 electronic fuzes at a rate of 50,000 per month on an 1-8-5 schedule, funding in the amount of \$8.6 million is requested.

Funding in the amount of \$4.3 million to establish an initial production facility to load, assemble and pack the Direct Airfield Attack Combined Munition (DAACM) in support of Air Force requirements. Metal parts will be provided through Air Force procurement utilizing private industry.

Omnibus design funds in the amount of \$29.4 million are required for initiation and/or continuation of construction criteria, equipment, and concept; final design, process design; design related studies; and other design related work necessary to assure efficient and timely execution of facility projects.

To provide a second source for load, assemble and pack of 120mm tank rounds and to augment the established production facility at the Iowa Army Ammunition Plant, Burlington, Iowa, this \$10.0 million project will adapt the Iowa 120mm facility design and utilize suitable buildings, at the Milan Army Ammunition Plant, Milan, Tennessee.

This project is to correct deficiencies in the Continuous Automated Multi-Base Line (CAMBL) facility identified during prove-out and acceptance (PO&A). The Radford Army Ammunition Plant, Radford, Virginia facility represents the latest state of the art in propellant manufacturing technology. In FY1989 \$16.7 million is requested.

In support of modernization the ballistic acceptance testing of ammunition at the Jefferson Proving Ground, this project will incorporate the application of radar to ballistic acceptance testing, that has the capability to track various caliber projectiles, alternating between several firing positions and maximizing ammunition production acceptance testing. \$6.7 million is requested for this effort.

In support of modernization the "A" compositions facility, line 10, at Holston Army Ammunition Plant, Kingsport, Tennessee, \$30.0 million is required to upgrade facilities to meet increased Five Year Defense program (FYDP) requirements.

This project will eliminate the danger and injuries suffered by operating personnel due to flash fires from pyrotechnic compositions during process operations. In FY1989, \$13.2 million is requested to enhance safety at Lone Star Ammunition plant located at Texarkana, Texas.

To modernize loading dock facilities at Holston Army Ammunition Plant, Kingsport, Tennessee, \$3.7 million is requested to replace facilities that are used for off site shipment of explosive compositions. The industrial readiness of this plant will be improved; increased loading capacity will be realized, and result in manpower savings.

To construct a trinitroresorconol (TNR) manufacturing facility at Lake City Army Ammunition Plant, Independence, Missouri; \$5.3 million is requested to replace the existing facility that has deteriorated from constant exposure to nitric and sulfuric acid fumes.

This project is to enclose walkways between the pyrotechnic production and storage buildings at the Lake City Army Ammunition Plant, Independence, Missouri. Under present conditions, production must be halted during inclement weather to protect against the entry of water into product mix. Water reacts with strontium in the mix, resulting in a fire hazard. In FY1989, \$1.7 million is requested.

To upgrade the Primary Overhead Electrical Distribution System at the Radford Army Ammunition Plant, Radford, Virginia, \$16.5 million is requested to correct hazardous deficiencies in the existing congested system that result in electrical faults, that propagate to other circuits by electrical arcing, causing production curtailments and hazards to plant personnel.

To modify and upgrade the lightning protection system at the Indiana Army Ammunition Plant, Charlestown, Indiana, \$1.9 million is requested to improve shipping houses, ammunition magazines, igloos and crating sheds that support storage of raw material propellants and igniter powders.

To correct safety waivers at four Army Ammunition facilities, \$7.6 million is requested to correct deficiencies on the modernized detonator load line at Iowa Army Ammunition Plant, Burlington, Iowa; to correct electrical distribution deficiencies for lines one through nine at Holston Army Ammunition Plant, Kingsport, Tennessee; to construct a 30' x 50' earth covered metal arched magazine to store M42/M46 grenades at Milan Army Ammunition Plant, Milan, Tennessee; and to provide temperature and humidity conditioning for three locations at the Longhorn Army Ammunition Plant, Marshall, Texas, to avoid static electricity hazards and prevent moisture condensation where metal powders are exposed.

Funding in the amount of \$3.0 million is requested to correct security deficiencies at nine Army Ammunition plants. Security improvements will include installation of security fencing, purchase and installation of security hasps on igloos, installation of intrusion detection systems and a closed circuit TV for monitoring a process line.

In FY1989, \$13.0 million is requested for continuation of the phase 1 Research Department Explosive/High Melt Explosive (RDX/HMX) Musall process design. The location of the facility has not been determined.

To provide Initial Production Facilities (IPF) to meet the load, assemble and pack (LAP) requirements of the new 105mm/120mm tank ammunition rounds, \$27.5 million is requested.

To provide for procurement, installation and debug of an Automated Inspection System (AIDECS) located at the Iowa Army Ammunition Plant, Burlington, Iowa. The AIDECS system is utilized for inspection of the explosive casts of the 105mm HEXM913 RA projectile. \$4.9 million is requested.

Also included in the FY1989 request is \$42.0 million for the necessary production support and equipment replacement for plants in active production.

Layaway of Industrial Facilities

(\$ in thousands)

<u>FY 1988</u>	<u>FY 1989</u>
<u>19,417</u>	<u>19,378</u>

The \$19.4 million requested for layaway in FY 1988 is for the protection and preservation of equipment and facilities no longer required for active production, but which must be retained for future peacetime or mobilization production needs. In FY 1989, funds in the amount of \$19.4 million are included for a similar purpose.

Components for Prove-out

(\$ in thousands)

<u>FY 1988</u>	<u>FY 1989</u>
<u>16,164</u>	<u>14,336</u>

This line provides for the prove-out and acceptance of prior year modernization, expansion and initial production facilities. Funds are used to assure that the facility is capable of producing an acceptable end product, that manufacturer warranties are met and that the facility is capable of producing at the design rate.

The FY 1988 program includes prove-out of the following:

Plant

Longhorn Army Ammunition Plant
Radford Army Ammunition Plant
Holston Army Ammunition Plant

Title of Prove-out

MUSALL Pilot Plant Instl.
Prop-155 Stick Process Upgrade
Acid-Restore 300 T/D AOP Ph II

The FY1989 prove-out program includes an XM864 Metal Parts Facility at Louisiana Army Ammunition Plant; upgrading an automated single base facility (CASBL) at Radford Army Ammunition Plant and prove-out of 155mm XM864 production facilities at multiple sites.

(\$ In Thousands)

Jefferson Proving Ground

<u>FY1988</u>	<u>FY1989</u>
0	989.0

This program is to modernize and upgrade existing test instrumentation required during the conduct of production acceptance testing of Army ammunition components. This effort will replace existing obsolete, unreliable or economically unrepairable test equipment and instrumentation currently in use. This will result in more accurate reliable data and faster turn around of the production items being tested. This will also allow for earlier release of product, avoiding the requirement for additional storage facilities, and reduce waste and scrap by stopping faulty production. This effort, to be done in independent increments, is expected to continue through FY 1991, at an estimated total cost of \$10.0 million.

PROCUREMENT OF AMMUNITION, ARMY

Section 3

Comparison of Program Requirements and Financing

Comparison of FY 1987 program requirements as reflected in FY 1987 budget with FY 1987 program requirements as shown in FY 1988 budget.

Comparison of FY 1987 financing as reflected in FY 1987 budget with FY 1987 financing as shown in FY 1988 budget.

Comparison of FY 1986 program requirements as reflected in FY 1987 budget with FY 1986 program requirements as shown in FY 1988 budget.

Comparison of FY 1986 financing as reflected in FY 1987 budget with FY 1986 financing as shown in FY 1988 budget.

COMPARISON OF FY 1987 PROGRAM REQUIREMENTS
AS REFLECTED IN FY 1987 BUDGET WITH
FY 1987 PROGRAM REQUIREMENTS AS SHOWN IN FY 1988 BUDGET

SUMMARY OF REQUIREMENTS (In Thousands of Dollars)			
Appropriation:	Program Requirements In FY 1987 Budget	Program Requirements In FY 1988 Budget	Increase (+) or Decrease (-)
Procurement of Ammunition, Army			
Activity 1 - Ammunition	1,900,100	1,732,150	-167,950
Activity 2 - Ammunition Production	<u>353,900</u>	<u>355,000</u>	<u>+1,100</u>
Base Support	2,254,000	2,087,150	-166,850

EXPLANATION BY ACTIVITY

Activity 1 - Ammunition. The \$167,950 thousand decrease is the net result of Congressional action on the FY 1987 Appropriation.

Activity 2 - Ammunition Production Base Support. The \$1,100 thousand increase is the net result of Congressional action on the FY 1987 Appropriation.

COMPARISON OF FY 1987 FINANCING AS REFLECTED
IN THE FY 1987 BUDGET WITH FY 1987 FINANCING
AS SHOWN IN FY 1988 BUDGET

Appropriation:	(In Thousands of Dollars)		
	Financing In FY 1987 Budget	Financing In FY 1988 Budget	Increase (+) or Decrease (-)
Procurement of Ammunition, Army			
Program Requirements, (Total)	2,430,800	2,231,050	-199,750
Program Requirements (Service Account)	(2,254,000)	(2,087,150)	(-166,850)
Program Requirements (Reimbursable)	(176,800)	(143,900)	(-32,900)
Less:			
Anticipated Reimbursements	176,800	143,900	-32,900
Reprogramming from prior year budget plans	-0-	-0-	-0-
Unobligated balance available from prior year to finance new budget plans	-0-	-0-	-0-
Unobligated balance transferred from other accounts	-0-	-0-	-0-
Add: Unobligated balance transferred to other accounts	-0-	-0-	-0-
Unobligated balance available to finance subsequent year budget plans	-0-	-0-	-0-
BUDGET AUTHORITY	2,254,000	2,087,150	-126,850

BUDGET AUTHORITY

Appropriation	2,254,000	2,087,150	-166,850
Appropriation (Adjusted)	2,254,000	2,087,150	-166,850

EXPLANATION OF CHANGES IN FINANCING

The total program requirements for fiscal year 1987 have decreased by \$199,750 thousand since the FY 1987 budget request was presented to the Congress. This decrease is attributed to the following:

Budget Authority: The decrease of \$166,850 thousand is the result of Congressional action on the FY 1987 Appropriation.

Anticipated reimbursements: Estimates of sales of ammunition to customers, including foreign countries, are decreased by \$32,900 thousand to reflect current program execution plans.

COMPARISON OF FY 1986 PROGRAM REQUIREMENTS
AS REFLECTED IN FY 1987 BUDGET WITH
FY 1986 PROGRAM REQUIREMENTS AS SHOWN IN FY 1988 BUDGET

<u>SUMMARY OF REQUIREMENTS (In Thousands of Dollars)</u>			
Appropriation:	Total Program Requirements	Program Requirements In FY 1988 Budget	Increase (+) or Decrease (-)
Procurement of Ammunition, Army	In FY 1987 Budget		
Activity 1 - Ammunition	1,995,700	1,864,574	-131,126
Activity 2 - Ammunition Production	501,500	470,701	-30,799
Base Support			
Total	2,497,200	2,335,275	-161,925

Explanation by Activity

Activity 1 - Ammunition. The 131,126 thousand decrease is the net result of Gramm-Rudman Hollings reduction (-\$97,912 thousand), Congressional rescission (-\$39,562 thousand), and a transfer from Activity 2 (+\$6,348 thousand).

Activity 2 - Ammunition Production Base Support. The \$30,799 thousand decrease is the result of Gramm-Rudman Hollings reduction (-\$24,451 thousand) and a transfer to Activity 1 (-\$6,348 thousand).

COMPARISON OF FY 1986 FINANCING AS REFLECTED
IN THE FY 1987 BUDGET WITH FY 1987 FINANCING
AS SHOWN IN FY 1988 BUDGET

Appropriation:	(In Thousands of Dollars)		
	Financing In FY 1987 Budget	Financing In FY 1988 Budget	Increase (+) or Decrease (-)
Procurement of Ammunition, Army			
Program Requirements, (Total)	2,664,000	2,437,684	-226,316
Program Requirements (Service Account)	(2,497,200)	(2,335,275)	(-161,925)
Program Requirements (Reimbursable)	(166,800)	(102,409)	(-64,391)
Less:			
Anticipated Reimbursements	166,800	102,409	-64,391
Reprogramming from prior year budget plans	-0-	-0-	-0-
Unobligated balance available from prior year to finance new budget plans	-0-	-0-	-0-
Unobligated balance transferred from other accounts	-0-	-0-	-0-
Add: Unobligated balance transferred to other accounts	-0-	147,700	-0-
Unobligated balance available to finance subsequent year budget plans	-0-	-0-	-0-
BUDGET AUTHORITY	2,497,200	2,335,275	-161,925
Appropriation	2,497,200	2,335,275	-161,925
Appropriation (Adjusted)	2,497,200	2,335,275	-161,925

EXPLANATION OF CHANGES IN FINANCING

The FY 1986 total program requirements have decreased by \$226,316 thousand since the FY 1987 budget request was presented to the Congress. This decrease is due to the following:

Budget Authority: Decrease of \$161,925 thousand is the result of a Congressional rescission (-\$39,562 thousand) and Gramm-Rudman Hollings (-\$122,363 thousand).

Anticipated Reimbursements: Additional \$64,391 thousand decrease reflects actual sales of ammunition to foreign countries and other customers.

PROCUREMENT OF AMMUNITION, ARMY

SECTION 4

SELECTED DATA SHEETS

4-44 January 1987

PROCUREMENT OF AMMUNITION, ARMY
PRODUCTION BASE SUPPORT
(\$ in Millions)

Service: Army

P-1 Line Item: Provision of Industrial Facilities

Projects:

ANNUAL SUPPORT

	<u>FY1986</u>	<u>FY1987</u>	<u>FY1988</u>	<u>FY1989</u>
58x5060 - Jefferson Proving Ground: Production	1.4	2.0	1.2	1.2
Support and Equipment Replacement (PS&ER)				
58x5314 - Louisiana Army Ammunition Plant (AAP): Spt - PS&ER	1.8	2.3	2.4	2.3
58x5316 - Lone Star AAP: Spt - PS&ER	3.0	2.7	3.4	2.0
58x5317 - Milan AAP: Spt - PS&ER	2.5	2.4	2.7	4.3
58x5325 - Sunflower AAP: Spt - PS&ER	0	.3	1.2	.3
58x5326 - Radford AAP: Spt - PS&ER	6.0	4.3	4.4	5.1
58x5327 - Longhorn AAP: Spt - PS&ER	2.3	2.3	2.9	2.1
58x5328 - Holston AAP: Spt - PS&ER	2.7	2.2	1.7	2.2
58x5329 - Kansas AAP: Spt - PS&ER	2.5	2.7	1.5	2.8
58x5330 - Indiana City AAP: Spt - PS&ER	3.1	3.1	4.2	4.2
58x5332 - Lake City AAP: Spt - PS&ER	3.1	2.2	2.1	3.9
58x5333 - Iowa AAP: Spt - PS&ER	2.8	2.7	1.2	1.7
58x5342 - Scranton AAP: Spt - PS&ER	1.5	1.9	.4	1.8
58x5343 - Riverbank AAP: Spt - PS&ER	.8	.2	1.2	1.1
58x5662 - All Plants: Omnibus Project for Purchase of Self-Amortizing Equipment	1.0	1.2	1.0	1.0
58x5711 - Environmental Restoration	1.0	3.9	2.9	3.0
Projects under each \$900,000 each	1.4	1.9	1.8	3.0
Subtotal Production Support & Equipment Replacement	36.9	38.3	36.2	42.0

PROCUREMENT OF AMMUNITION, ARMY
PRODUCTION BASE SUPPORT
(\$ in Millions)

Projects

<u>Initial Production Facility (IPF)</u>	<u>FY1986</u>	<u>FY1987</u>	<u>FY1988</u>	<u>FY1989</u>
5860063 - Pine Bluff Arsenal: IPF - Bigeye Bomb Load, Assemble & Pack (LAP)	28.3			
5860074 - Commercial: IPF - Bigeye Bomb Metal Parts	17.6			
5860079 - X-Facility: IPF - 0-(2-diisopropylaminoethyl) O'-ethylmethylphosphonite (QL)	48.0			
Production facility for Bigeye Bomb				
5860117 - Longhorn AAP: IPF - Musall Facility	20.0			
5860127 - Commercial: IPF - 105mm XM900 MPTS and Core	24.0			
5860140 - Redford AAP - Improved Nitrocellulose Purification Facility	2.5			
5862208 - Lake City AAP: IPF - 5.5mm Squad Automatic Weapon System (SAWS)	3.8			
Ball Lines 4, 5 Conversion				
5870103 - Commercial: IPF - Binary - Methylphosphonic dichloride (DC)		18.2		
5880110 - Kansas AAP: Commercial: IPF - Sensor Fuzed Weapon Fuze			3.3	
5870115 - Multiple Sites: 155mm XM864 LAP and Metal parts	12.3			
5880115 - X-Facility: - 155mm X864 Base Burner Assembly			7.1	
5880125 - McAlester AAP: IPF - 16"/50 Projectile LAP Facility			1.0	
5890067 - X-Facility: XM762/XM767 Electronic Timed Artillery Fuze				8.6
5890151 - X-Facility: IPF - Direct Airfield Attack Combined Munitions				4.3
5893278 - Multiple Facilities: IPF 105mm/120mm Tank Ammunition Projects Under \$900,000 Each	.5			27.5
Subtotal Initial Production Facilities	157.0	18.2	11.4	40.4

PROCUREMENT OF AMMUNITION, ARMY
PRODUCTION BASE SUPPORT
(\$ in Millions)

<u>Projects</u>	<u>FY1986</u>	<u>FY1987</u>	<u>FY1988</u>	<u>FY1989</u>
<u>EXPANSION (EXP)</u>				
5862195 - Lake City AAP: EXP - 5.56mm Bandoleer M8 pack equipment	2.2			
5863257 - Commercial: EXP - Bomb - Combined Effects Munitions	5.9			
CEM/BLU 97B Metal Parts	17.4	15.9	30.5	29.4
58X3046 - Engineering Design				
5872307 - Radford AAP: EXP - 155mm Solvent Stick Propellant		3.0		
Manufacture				
5873277 - X-Facility: EXP - 155mm M687 Projectile Metal Parts		4.5		
(MPTS)		11.1		
5870115 - Multiple: EXP - 155mm XM864 Metal Parts and LAP				
5882430 - X-Facility: MUSALL Design, Phase I Research Department			12.1	13.0
Explosive/High Melt Explosive (RDX/HMX)				10.0
5882657 - Milan AAP: EXP - 120mm Tank LAP Facility				
5882656 - Louisiana AAP: - XM864 Projectile 155mm Howitzer			12.2	
5892875 - Radford AAP: EXP - Continuous Automated Multi-Base Line				
(CAMBL) for Stick Propellant				16.7
Projects Under \$900,000 Each	<u>1.1</u>			
Subtotal Expansion:	26.6	34.5	54.8	69.1

PROCUREMENT OF AMMUNITION, ARMY
PRODUCTION BASE SUPPORT
(\$ in Millions)

<u>Projects</u>	<u>FY1986</u>	<u>FY1987</u>	<u>FY1988</u>	<u>FY1989</u>
<u>Modernization (MOD)</u>				
5862407 - Lake City AAP - 5.56mm Small Caliber Multiproduct Handling System	7.3			
58x2439 - Holston AAP: MOD - Productivity Improvements (RDX to HMX) Air Compressor Bldg and Backup Electric Power		4.2	7.1	
5862447 - Holston AAP: MOD Conversion Research Department Explosive to High Melt Explosive (RDX to HMX)	24.9			
5682488 - St. Louis AAP: Mod-Electrical Distribution System (MPTS)	10.0			
5872134 - Radford AAP: Steam Tie Line Horseshoe Area		8.7		
5872158 - Indiana AAP: MOD - Bldg - Central Laboratory		2.0		
5872225 - Radford AAP: MOD - Upgrade Powerhouse Electrical Distribution System		9.2		
5872102 - Lone Star AAP: Automate Handling Operations		2.5		
5873302 - Commercial Second Forge Line Equip Package (422)		4.7		
5872565 - Milan AAP: Automate Load and Assembly Operations		1.7		
5872659 - Holston AAP: Repair Acetic Acid Facilities		2.4		
5872674 - Louisiana AAP: Anodic Coat Aluminum Ogives M825/483		1.5		
5872340 - Badger AAP: Repair/Replace Defective Process Equipment		2.1		
5872476 - Badger AAP: Correct Line Deficiencies		5.9		
5882218 - Radford AAP: MOD - Continuous Automated Single Base Line Deficiencies Correction			8.1	
5882222 - Iowa AAP: MOD 155mm M913 Automatic Inspection System				4.9
5882700 - Multiple locations: MOD to correct Safety Deficiencies			3.6	
5892055 - Holston AAP: MOD Loading Docks for Explosives				3.7
5892245 - Multiple Sites: MOD - Pyrotechnic Safety Enhancements				13.2
5892495 - Lake City AAP: Relocate and Modernize TNR process				5.3
5892498 - Lake City AAP: MOD covered walkways for PYRO Mixing Area				1.7
5892519 - Radford AAP: MOD Primary Overhead Electrical distribution System				16.5

5892547 - Indiana AAP: MOD Lightning Protection				1.9
5892701 - Multiple Locations: MOD to correct Safety Deficiencies				7.6
5892800 - Multiple Locations: MOD to Provide Security	11.7			3.0
5893000 - Holston AAP: Modernization "A" Composition Facility, Line 10				30.0
0895161 - Jefferson Proving Ground: MOD Ballistic acceptance Testing Radar				6.7
Subtotal Modernization	<u>42.2</u>	<u>44.9</u>	<u>30.5</u>	<u>94.5</u>
TOTAL - PROVISION OF INDUSTRIAL FACILITIES	262.5	135.9	132.9	246.0

PROCUREMENT OF AMMUNITION, ARMY
PRODUCTION BASE SUPPORT
(\\$ in Millions)

<u>P-1 Line Item: Production Base Modernization:</u>	<u>FY1986</u>	<u>FY1987</u>	<u>FY1988</u>	<u>FY1989</u>
<u>Projects:</u>				
5860086 - Lake City AAP: EXP-5.56mm Tracer Charging Second Unit	2.7			
5862232 - Lake City AAP: EXP - 5.56 Blank - Second Unit	1.5			
5862523 - Lone Star AAP: MOD - FASCAM Melt Pour Equipment	1.2			
5863281 - Commercial: MOD - Fuze Production Equipment	2.7			
5862224 - NAC/SAC Modernization, Badger	10.7			
5863565 - Radford AAP: MOD - Powerhouse	39.8			
5862145 - Lone Star AAP: MOD - Mortar Test Assembly	1.3			
5863244 - Commercial: MOD 155mm MPTS PEP-422	9.0			
5863400 - Multiple: EXP - Omnibus Design	13.5	13.1		
5862476 - Line Deficiency Corrections, Badger	10.0			
5862512 - Louisiana AAP: 155mm MPTS on Y Lines	3.0			
5862368 - Correct AOP Operational Deficiencies, Badger Deficiencies	1.4			
5873293 - Commercial Forge Room Equipment (PEP 422)		7.0		
5873243 - Commercial Forge Room Equipment (PEP 455)		8.7		
5862554 - Mississippi AAP Correct Deficiencies		130.2		
5873201 - Iowa AAP - MOD: M55 Detonator Loader Replacement		1.5		
5872487 - Radford AAP - MOD TNT Line B Voids Correction		2.0		
5873046 - Multiple - Omnibus Design in Support of Mobilization		14.5		
5873212 - Commercial - EXP: 120mm Combustible Cartridge Case Second Source		8.0		
Items less than \$900,000	<u>1.2</u>	<u>1.0</u>		
	98.0			
		186.0		

PROCUREMENT OF AMMUNITION, ARMY
PRODUCTION BASE SUPPORT
(\$ in Millions)

Projects

	<u>FY1986</u>	<u>FY1987</u>	<u>FY1988</u>	<u>FY1989</u>
<u>P-1 Line Item: Layaway of Industrial Facilities</u>				
<u>Projects</u>				
58X8450 - Armament Munitions and Chemical Command (AMCCOM) Layaway and/or Redistribution of Government-Owned Equipment in Government-Owned Plants	13.7	18.5	12.6	15.4
58X9580 - Armament Munitions and Chemical Command (AMCCOM) Layaway and/or Redistribution of Government-Owned Equipment	2.9	4.0	6.8	4.0
5865260 - Jefferson Proving Ground: Layaway Test Facility	.7			
3864201 - Missile Command Layaway of Government-Owned	.2			
Subtotal Layaway of Industrial Facilities	17.5	22.5	19.4	19.4
<u>P-1 Line Item: Components for Prove-out</u>	13.3	8.6	16.2	14.3
<u>P-1 Line Item: Jefferson Proving Ground</u>	1.9	2.2		1.0
58X5160 - Jefferson Proving Ground Test Facility				
<u>P-1 Line Item: Chemical Demilitarization</u>	77.3			
Total Ammunition Production Base Support	470.6	355.0	168.6	280.7

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-8